e-ISSN: 3025-6224

Scientific Journal of Pediatrics (SJPed)

Journal website: https://phlox.or.id/index.php/sjped

The Relationship between Feeding Patterns and Stunting Incidence in Toddlers Aged 12-59 Months in the Working Area of Pembina Health Center, Plaju, Palembang, Indonesia

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ARTICLE INFO

Keywords:
Child growth
Children
Sociodemographics
Stunting

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The author has reviewed and approved the final version of the manuscript.

https://doi.org/10.59345/sjped.v1i1.11

A B S T R A C T

Introduction: Stunting is a linear growth disorder caused by malnutrition and chronic infectious diseases. The food intake of a child is very highly influenced by parental feeding patterns. The more optimal the feeding of a child, of course, the more optimal the growth and development of the child, where the factor of nutrition greatly affects the growth of a child's body. This study aimed to determine the relationship between feeding patterns and the incidence of stunting in toddlers aged 12-59 months in the working area of Pembina Health Center, Plaju, Palembang, Indonesia. **Methods:** This study is a cross-sectional analytic observational study. A total of 100 research subjects participated in this study. Analysis of sociodemographic data and feeding patterns was carried out using SPSS software univariate and bivariate. **Results:** The study results show that the majority of the subject with poor feeding patterns have a greater proportion of stunting events. Meanwhile, research subjects with good feeding patterns had a smaller proportion of stunting events. The results of this study indicate that the pattern of feeding in children is related to the incidence of stunting, $p<0.05$. **Conclusion:** The pattern of feeding children is related to the incidence of stunting in toddlers aged 12-59 months in the working area of Pembina Health Center, Plaju, Palembang, Indonesia.

1. Introduction

Stunting is a linear growth disorder caused by malnutrition and chronic infectious diseases. This incident repeatedly occurs as indicated by the Z-Score value for height compared to age which is less than the standard set by the World Health Organization (WHO), which is – 2 SD (standard deviation). Stunting is a form of long-term reflection of the inadequate quality and quantity of food consumed and often suffering from infectious diseases in childhood. The problem of stunting is a nutritional problem that needs attention because it can affect the quality of human resources.

The prevalence of stunting in Indonesia is higher than in other countries in Southeast Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%). In Indonesia, an estimated 7.8 million children under the age of 5 are stunted. Indonesia is included in the top 5 countries with a high number of children under 5 years of age experiencing stunting.[1-5]

The problem of stunting is determined by the factors that influence it. These factors in each place can be different from each other. The growth of a child's body is influenced by direct and indirect causes. Direct causes include food intake (consumption of macro and micronutrients) and health conditions (infectious diseases), while indirect causes include household food security, parenting styles, environmental sanitation, and utilization of health services. The food intake of a child is very highly influenced by parental feeding patterns. The more

optimal the feeding of a child, of course, the more optimal the growth and development of the child, where the factor of nutrition greatly affects the growth of a child's body. Stunting is not just a problem of disrupting the growth of a child's body. This disorder can expand into various disorders related to cognitive development and functional disorders, and future social economy. Of course, that can trigger an explosion of problems social community economy.[6-11] This study aimed to determine the relationship between feeding patterns and the incidence of stunting in toddlers aged 12-59 months in the working area of Pembina Health Center, Plaju, Palembang, Indonesia.

2. Methods

This study was a cross-sectional analytic observational study and used primary data obtained from interviews with research subjects using an instrument questionnaire. A total of 100 research subjects participated in this study, where the research subjects had to fulfill criteria inclusion. The inclusion criteria were research subjects who had children under five aged 12-59 months in the working area of Pembina Health Center, Plaju, Palembang, Indonesia, aged more than 18 years, and agreed to participate in this study by signing an informed consent sheet. This study was approved by the medical and health research ethics committee of the Faculty of Medicine, Universitas Sriwijaya.

This study conducted observations of the sociodemographic data of the research subjects and feeding patterns of toddlers using a questionnaire. The questionnaire provides a list of questions related to what food should be given to children and how to feed it to children. The scoring system of each answer subject research where if the question items related to feeding patterns are answered no, then a score of 0 will be obtained, and if yes, a point of 1 will be obtained. Data analysis was carried out using SPSS software version 25. The univariate analysis presents the frequency distribution of each variable test. Bivariate analysis was carried out to determine the relationship between stunting and toddler feeding patterns, with a p-value <0.05.

3. Results and Discussion

Table 1 presents the baseline characteristics of the research subjects. The age of the mother of the majority of research subjects was in the range of 26-35 years. The mother's education of the majority of research subjects had primary school education. The majority of research subjects' mothers had a birth spacing of ≤ 2 years. The majority of research subjects experienced stunting, and the majority of children's feeding patterns were in a bad category.

Table 1. Baseline characteristics of research subjects.

No.	Variable	Frequency	Percentage
1.	Mother's age		
	17-25 years	38	38
	26-35 years	58	58
	> 35 years	4	4
2.	Mother's education		
	Primary school	56	56
	High school	32	32
	College	12	12
3.	Childbirth spacing		
	≤ 2 years	62	62
	> 2 years	38	38
4.	Child stunting status		
	Stunting	62	62
	Not stunting	38	38
5.	Feeding pattern		
	Good	37	37
	Bad	63	63

Table 2 presents the relationship between feeding patterns and the incidence of stunting. The study results show that the majority of the subject with poor feeding patterns have a greater proportion of stunting events. Meanwhile, research subjects with good feeding patterns had a smaller proportion of stunting

events. The results of this study indicate that the pattern of feeding in children is related to the incidence of stunting, p<0.05.

Table 2. The relationship between feeding patterns and the incidence of stunting.

Feeding patterns	**Incidence of stunting**		**p-value***
	Yes	No	
Bad	43	20	0,001
Good	12	25	

*Chi-square test, p<0,05.

The pattern of feeding by parents in the working area of the Pembina Health Center, Plaju, Palembang, is classified as poor. This is because many parents do not give breast milk (ASI) exclusively, even if someone gives breast milk, but it is supplemented with other types of food or drink, starting from babies less than 6 months old. Food for children 0-6 months is breast milk only. At the age of 6-9 months, the child is given breast milk plus crushed fruit 1-2 times or can also be given soft food 1 time and soft food 2 times. Aged 9-12 months, children are still given breast milk, plus fruit 1-2 times and soft food 3 times. In children over 1 year old, they are still given breast milk plus fruit 1-2 times, staple food, and side dishes 4 times or more.[12-16]

Babies who are breastfed generally grow rapidly in the first 2-3 months of life but slower than babies who are not exclusively breastfed. In the first week of life, weight loss is often found in 5% of babies whom are formula fed and 7% in babies who are breastfed. If there are problems with breastfeeding, weight loss of up to 7% can occur in the first 72 hours of life, resulting in decreased immunity in infants which causes the emergence of various diseases that interfere with growth.[17-20]

4. Conclusion

The pattern of feeding children is related to the incidence of stunting in toddlers aged 12-59 months in the working area of Pembina Health Center, Plaju, Palembang, Indonesia.

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